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ABSTRACT

This training unit on rescue is part of a 17-unit course package written to aid instructors in the development, teaching, and evaluation of fire fighters in the Wisconsin Fire Service Certification Series. The purpose stated for the 8-hour unit is to familiarize the fire fighter with the many types of rescue work that fire departments are called upon to perform, to show the simple rescue tools used, and to examine the basic procedures for locating, removing, and transporting victims of emergency situations. An instructor's guide sheet provides this information: introduction to the topic, instructor preparation, length of unit, methods of instruction, testing, equipment and facilities required, recommended visual aids, and references. Following a list of unit objectives, a lesson plan outlines the main teaching points and states the preferred teaching method, cites the reference and page number(s) where the information is to be found, and indicates the necessary handouts. Other contents in the unit include a unit quiz, answer key to the quiz, and handouts (graphs, student worksheets, informational material, and forms). (YLB)

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FIRE SERVICE CERTIFICATION SERIES

UNIT FSCS-FF-14-81

RESCUE

FIRE SERVICE TRAINING

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RESCUE

Prepared by:

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Fire Service Training

INTRODUCTION

The purpose of this unit is to familiarize the firefighter with the many types of rescue work that fire departments are called upon to perform. They should also be familiar with and capable of using the mor simple rescue tools that every fire department normally uses.

The firefighters should learn the basic procedures for locating, removing and transporting victims of the various situations and be capable of performing the skills required to cope with these incidents.

INSTRUCTOR PREPARATION

Carefully study the objectives to determine the goals that have been set for the fire fighters upon completion of this unit.

Review the lesson plans and if necessary, consult the references listed.

Develop suitable audio-visual aids, provide training area and necessary tools and equipment to effectively teach this unit.

LENGTH OF UNIT

Classroom Work	2 hours
Demonstration and Practice	5 hours
Evaluation and Testing	1 hour

METHODS OF INSTRUCTION

Lecture - Illustration - Demonstration

Suggested methods and techniques are listed under Instructor's Notes on the lesson plans, For further information, consult Fire Service Instructor Training, IFSTA #303, 3rd ed. pp. 71-83.

TESTING

At the end of this unit, a written quiz of five or more questions will be given.

EQUIPMENT AND FACILITIES REQUIRED

Classroom with necessary audio-visual equipment, an area where rescue evolutions can be demonstrated and practiced, necessary tools and equipment to teach unit.

REFERENCES

Peige, John D.Ed, ESSENTIALS OF FIRE FIGHTING , 1st ed., IFSTA #200, Stillwater 1977 pp. 209-233

Hudiburg, E. and McCoy, C., ed. FIRE SERVICE RESCUE AND PROTECTIVE BREATHING PRACTICES, #108, IFSTA, Stillwater, 4th ed., 1969, pp. 1-6, 63-72, 82-83, 93-105, 121-123, 127-144

Hudiburg, E. and McCoy, C., ed., FIRE SERVICE PRACTICES FOR VOLUNTEER FIRE DEPARTMENTS, #201, IFSTA, Stillwater, 5th ed. 1971, pp. 189-203

OBJECTIVES

All objectives in this unit are to be met according to the material contained in the International Fire Service Training Association Manuals #108 Fire Service Rescue and Protective Breathing Practices, # 200 Essentials of Fire Fighting and #201 Fire Service Practices for Volunteer Fire Departments.

To satisfactorily complete this unit, the fire fighter must attain a grade of 70 or higher on the written quiz and pass all items on the practical skills test.

NFPA STANDARD 1001

RESCUE

Firefighter I

3-12 Rescue

3-12.1 The firefighter shall demonstrate the removal of injured persons from the immediate hazard by the use of carries, drags and stretchers.

3-12.2 The firefighter shall demonstrate the procedure for searching for victims in burning, smoke-filled buildings, or other hostile environments.

3-12.3 The firefighter shall demonstrate and explain the uses of a life belt.

3-12.4 The firefighter shall demonstrate the use of a life net used by the authority having jurisdiction.

3-15.2 The firefighter shall demonstrate procedures for action when trapped or disoriented in a fire situation, or in a hostile environment.

Firefighter II

4-12.1 The firefighter shall demonstrate the procedure to remove debris, rubble and other materials found at a cave-in.

4-12.2 The firefighter shall demonstrate the use of the following rescue tools:

(a) shoring blocks
(b) trench jacks
(c) block & Tackle
(d) hydraulic jacks
(e) screw jacks

4-12.3 The firefighter shall demonstrate how to prepare a victim for emergency transportation by using standard available equipment, or be improvising a method.

OBJECTIVES

4-12 Rescue

4-12.4 The firefighter shall identify some dangers of search and rescue missions in tunnels, caves, construction sites and other hazardous areas as specified by the authority having jurisdiction.

4-12.5 The firefighter, given equipment used by the authority having jurisdiction and operating as a member of a team, shall demonstrate the extrication of a victim from a vehicle accident.

4-12.6 The firefighter, given the proper rope, shall tie the proper knot on a person and lower that person from the third floor level.

4-12.7 The firefighter shall demonstrate the use of breathing aid equipment used by the authority having jurisdiction, and explain the precautions of care and maintenance of each unit.

COURSE: FIRE SERVICE CERTIFICATION SERIES

LESSON: RESCUE

EQUIPMENT NEEDED: SLIDE, OVERHEAD OR MOVIE PROJECTORS, SCREEN

TRAINING AIDS: SLIDES, TRANSPARENCIES, FILMS, TEXTS, TOOLS

INSTRUCTORS NOTES	TEACHING POINTS
Ref: Essentials of Fire Fighting #200, IFSTA pp. 209-233 Ref: Fire Service Rescue #108 pp. 63-144 3-12 Rescue 3-12.2 3-15.2 Ref: pp. 209-213 #200 pp. 127-128 #108	Because of the dangers of extreme weather conditions alone can be so widespread, with respect to tornados and floods for example, no community can be considered safe from incidents which may cause the need for rescue operations. Add to that the carelessness of people with fire or automobiles, and rescue situations increase. Personnel Safety A firefighter needs protections against the weather, excessive heat, and fire gases, and should take no unnecessary chances during rescue procedures. Every firefighter should be equipped with: a. helmet b. bunker pants and coat c. gloves d. rubber boots with steel insoles e. positive-pressure self-contained breathing apparatus f. face and eye shields where needed Size-Up Size-up is an estimation or an evaluation of a condition from which an opinion or judgement can be formed. Sizing up a rescue situation is a continous process of evaluating existing conditions. It is more than just a single step in an operation, because size-up is never completed until the situation is under control. To size-up is to: a. learn the facts of the situation b. understand the probabilities c. know your own situation (personnel, equipment) d. determine plan of action

INSTRUCTORS NOTES

TEACHING POINTS

Ref: Essentials of Fire Fighting #200, IFSTA pp. 209-233

Ref: Fire Service Rescue #108 pp. 63-144

3-12 Rescue

3-12.2
3-15.2

Ref: #200 pp. 209-213
pp. 127-128 #108

Rescue From Burning Buildings

When firefighters enter a burning building to perform rescue work, they must first consider their own protection.

In order to protect the body surface from heat and flame, proper clothing should be worn.

The use of self-contained breathing apparatus should be required.

Rope guide lines tied to a rescuers body is considered to be a good practice when rescue needs to be performed in the dark or under extremely hazardous conditions.

Portable radios are very valuable in rescue work.

Fire streams of various characteristics are also used in connection with protection for firefighters and victims.

Victims may be trapped in a burning building and their normal means of exit cut off by fire.

In order to reach such victims, fire department ladders may need to be used.

If a fire occurs, in an occupied public gathering place, [illegible] serious complications may exist:

- natural exits are blocked
- evacuation must be made through exits or openings with which the occupants are not familiar
- a majority of the occupants are unnerved to the point that they may cause problems due to panic.

The following procedures will help assure a swift and safe rescue operation once the firefighters enter the involved structure.

- Always wear protective breathing apparatus when performing search and rescue in fire buildings.
- If at all possible work in pairs.
- By observing exterior of building before entering, locate more than one means of egress.

INSTRUCTORS NOTES	TEACHING POINTS
Ref: Essentials of Fire Fighting #200, IFSTA pp. 209-233 Ref: Fire Service Rescue #108 pp. 63-144 3-12 Rescue 3-12.2 3-15.2 Ref: pp. 209-213 #200 pp. 127-128 #108 Refer to Handout #1	Rescue From Burning Buildings . Once you enter the building, visibility will be poor at best. If you cannot see your feet, do not remain standing. SEARCH ON HANDS AND KNEES. . Completely search one room before moving to the next room. . Start your search on an outside wall. This will allow you to ventilate by opening windows as soon as possible. . Ventilate only if ventilation will not cause the spread of fire. . Move all furniture, searching behind and under all furniture. . Search all closets and cuboards, including shower stalls. . Occasionally, pause during search and listen for cries of help or other such signs or signals. . Move up and down stairs on your hands and knees, keeping head up whether ascending or descending. . After searching a room, leave a sign or signs indicating that a room has been searched; a. chairs turned over b. mattress rolled, folded or sideways on bed c. closet doors open . Close entry door to rooms searched to prevent the spread of fire. . Always look for extension of fire and report any extension to the commanding officer. . If rooms or buildings are too hot to enter, reach in doorway or window with handle of a tool. Many victims will be found just inside the door or windows . Once you have successfully rescued a victim, place them in someone's custody so that they will not try to re-enter the building for any reason.

INSTRUCTORS NOTES

TEACHING POINTS

Ref: Essentials of Fire Fighting #200, IFSTA pp. 209-233

Ref: Fire Service Rescue #108 pp. 63-144

3-12 Rescue

3-12.2
3-15.2

Ref: pp. 209-213 #200

Rescue From Burning Buildings

Rescue Breathing

If necessary you may share your breathings apparatus with the person you are rescuing.

1. Remove your facepiece pulling the head straps over the front of the headpiece.
2. Place the facepiece on the victim's face, allowing for two or three breaths.
3. Then take two or three breaths yourself.
4. Repeat this procedure until you are both safely out of the building.

Procedures When Trapped Or Disoriented

. If trapped in a hallway or staire, try to retreat down. NEVER GO UP.

. If unable to go down and out, go to a room off the hallway.

. Close the door behind you

. Follow the wall to a window.

. Open a window and straddle the window sill.

. Call for help and drop available articles out window to attract attention.

. If a window cannot be found, consciously stop and relax while considering actions for escape.

. Shallow breathing will extend the remaining air in the breathing apparatus.

Note: this last-resort action will not improve the dangerous effects of toxic gases or insufficient oxygen.

. When the tank is completely empty, disconnect the mask hose from the regulator and place inside clothing for some filtering effect.

. Increased demand from the exertions of fire fighting may cause the symptoms of disorientation and collapse even when oxygen is present at higher concentrations.

INSTRUCTORS NOTES

Ref: Essentials of Fire Fighting #200, IFSTA pp. 209-233

Ref: Fire Service Rescue #108 pp. 63-144

4-12 Rescue

4-12.1
4-12.4

Ref: pp. 213-217 #200

TEACHING POINTS

Rescue From Demolished Buildings

The difficulty that may be encountered in reaching a victim in a demolished building depends upon conditions as they are found.

Immediate rescue of surface and lightly-trapped victims should be accomplished first.

This immediate rescue will take care of injured persons who are not trapped and those persons who are trapped to the extent that their rescue can quickly be accomplished.

Rescue of a heavily-trapped victim is a more complicated endeavor and requires more time.

Lean-To Collapse

When floor supports fail in any type building, the floors and roof may drop in large sections and form voids.

If these sections remain in one piece, support on one side, but collapse on the other, they form a lean-to collapse.

Pancake Collapse

Weakening or destruction of bearing walls may cause the floors or the roof to collapse.

This collapse may cause the debris to fall as far as the lower floor or basement.

A collapse of this nature is referred to as a "pancake" collapse. Voids may be formed between the floors.

V-Type Collapse

When heavy loads, such as furniture and equipment, are concentrated near the center of a floor, the excess weight may cause the floor to give way.

This form of collapse is known as the "V-type" collapse.

TUNNELING

In order to reach a victim that is buried or trapped beneath debris, it is sometimes necessary to dig a tunnel as means of escape.

INSTRUCTORS NOTES

TEACHING POINTS

Ref: Essentials of Fire Fighting #200, IFSTA pp. 209-233

Ref: Fire Service Rescue #108 pp. 63-144

4-12 Rescue

4-12.1
4-12.4

Ref: pp. 213-217 #200
pp. 128-123 #108

TUNNELING

. Tunneling should be carried out from the lowest possible level.

. It should not be used for general search.

. Tunneling may, however, be used to reach a void under a floor where further search is to be continued.

. A tunnel must be of sufficient size to permit rescuers to bring victims out.

. It should not be constructed with abrupt turns.

. Tunnels as small as 30 inches wide and 3 feet high have proved satisfactory for most rescue work.

. Tunnels should be driven along a wall whenever it is possible.

Doing this simplifies the framing that is required to prevent cave-in.

Constructing a vertical shaft may be considered a form of tunneling for vertical or diagonal access.

These shafts are usually made through earth after debris has been cleared from the surface.

They are often made to reach a point where a wall must be pierced.

Shafts, however, should not be sunk where water or gas service lines enter a building.

Persons may have to be removed from under collapsed basemen walls or from basements still intact, but with exits closed by debris. This may require different techniques:

. Breaking through the wall from an adjacent basement to reach lean-to spaces.

. Clearing debris from manholes or coal chutes to gain entrance.

. Cutting a small hole in the ground floor, where they have not collapsed to gain entrance to the basement.

INSTRUCTORS NOTES

TEACHING POINTS

Ref: Essentials of Fire Fighting #200, IFSTA pp. 209-233

Ref: Fire Service Rescue #108 pp. 63-144

4-12 Rescue

4-12.1
4-12.4

Ref: pp. 213-217 #200
pp. 128-133 #108

TUNNELING

. If a floor has collapsed to form a void against two walls, a tunnel may be driven through the debris from one void to the other.

It should be remebered that debris tunneling is one of the most difficult and dangerous jobs in rescue work and it should be undertaken ONLY when other means of gaining access are impractical.

Walls made of brick with lime mortar, brick with cement mortar, stone, concrete and concrete blocks may be encountered during rescue operations.

. When cutting through walls or floors, try to locate sections of the structure where cutting can be done quickly and safely.

. Holes large enough for rescue purposes can usually be made in walls of brick with cement mortar without danger of the masonry falling.

. Stone walls may have stones of various sizes which are held together with various binding agents. Support will usually be needed only when holes are cut through walls made of small stones.

SHORING

Is a process of erecting a series of timbers or jacks to strengthen a wall or to prevent further collapse of a building or earth opening, not to restore walls and floors to their original position.

. DO NOT attempt to force beams, sections of floors or walls back into place as this may cause further collapse and damage.

. Temporary shoring is usually all that is done by rescue personnel.

Permanent shoring is generally done by contractors and builders during construction.

Since bracing, shoring or supporting walls and floors are basically engineering problems, fire officers should call upon the sources available for assistance when planning and conducting these operations.

Shoring is difficult work and requires training and practice before efficiency is attained.

INSTRUCTORS NOTES

TEACHING POINTS

Ref: Essentials of Fire Fighting #200, IFSTA pp. 209-233

Ref: Fire Service Rescue pp. 63-144 #108

4-12 Rescue

4-12.1
4-12.4
4-12.2
Ref: pp. 213-217 #200
pp. 128-133 #108

NOTE: In an emergency, air may be directed to a victim through a garden hose.

CRIBBING

Cribbing is aprocess of arranging planks into a crate-like construction and thei arrangement usually has separated joints.

These planks may sometimes be crisscrossed with the joints staggered.

Cribbing as used in rescue work, is usually adapted to roof and ceiling supports but it can be used on walls when necessary.

Tunnel openings and passages are made secure by using the shoring and cribbing process.

Rescue From Cave-Ins

A growing number of serious injuries and fatalities at construction sites are resulting from excavation and trench cave-ins.

Although a buried victim must immediately receive air, continued rescue operations depend on making a site as safe as possible by shoring or cribbing to hold back other weakened earth formations.

An air hose or partly opened cylinder can be inserted in a hole dug to the victims face.

Further digging must also remove material around the victim's chest to allow for chest expansion in breathing.

Meanwhile, rescue apparatus, heavy equipment and spectators should be moved back to avoid causing other slides or cave-ins.

. While the remaining trench walls are held back, remove the dbris from around the victim.

. Do not use heavy equipment until the exact location and number of citims is known.

. If picks are to be used, it must be done with great care to avoid injuring a victim.

. Remove debris with baskets, buckets and wheelbarrows to a clear area.

. Take time for this so the material is not close enough to fall back into the cave-in site. Loose debris is unstable.

INSTRUCTORS NOTES

TEACHING POINTS

Ref: Essentials of Fire Fighting #200, IFSTA pp. 209-233

Ref: Fire Service Rescue #108 IFSTA pp. 63-144

4-12 Rescue

4-12.1
4-12.4
4-12.2
Ref: pp. 213-217 #200
pp. 128-133 #108

Rescue From Cave-ins

When removing debris, watch for key timbers or rocks which hold up other heavy portions of earth or other debris.

Improper moving of these key pieces could cause a dangerous collapse or slide.

During rescue operations, shoring blocks and cribbing may used to brace unstable walls.

Spacing between the walls can be maintained by a variety of tools carried on the apparatus or available at many construction sites.

Sheets of wood or metal slid into a trench to be used with jacks can help spread the force of the jack over a wider area of trench wall.

Screw Jack

Similar to some automobile jacks, screw jacks are operated by a lever which rotates a screw to raise the load.

The screw jack's main safety feature is that danger of slip back is eliminated.

Trench Jack

A trench jack is a screw jack used between two uprights to hold trench walls apart.

The screw with two handles (between two end plates) can be turned to adjust the opening of the jack for the width of the trench.

Trench jacks can be used high and low to hold the walls and allow movement of personnel in the trench.

Hydraulic Jack

The jack is operated by means of resistance offered when a liquid, usually oil, is forced through a small opening to move a plunger and raise a load.

It requires a minimum of handle pressure to lift heavy weights, but a load should not rest for long on a hydraulic jack because of the danger of leakage of the hydraulic fluid.

INSTRUCTORS NOTES

TEACHING POINTS

Ref: Essentials of Fire Fighting #200, IFSTA pp. 209-233

Ref: Fire Service Rescue #108, IFSTA pp. 128-133

4-12 Rescue

4-12.1
4-12.2
4-12.4

Ref: pp. 213-217 #200
pp. 128-133 #108

Jack Safety Measures

1. Work from a good foundation.
2. Pack as you jack, using crosstie crib.
3. Never leave a jack under load.
4. Raise or lower in unison slowly when using several jacks on one load.
5. Avoid over extending jack.
6. Remove jack handle when not in use.

Safety Precautions At Cave-Ins

1. Fire department personnel should not enter the trench without helmets and turnout coats. Although it may seem awkward to work in a confined area while wearing these items, they may save someone from injury or suffocation if another cave-in should occur.
2. Ladders should be placed in the trench on both sides of the cave-in area for a "quick exit." Ladders should extend at least three feet (1 m) above the top of the trench and be secured in place if possible.
3. Firefighters should be careful with the tools they are using in the trench to avoid injuring either one another or the victim.
4. Unnecessary fire department personnel should be kept out of the trench and away from its edge.
5. Bystanders should be kept away from the trench. If anyone refuses to move, summon the police.
6. Mechanical digging equipment that is used at the scene must have a guide assigned to it. This person will act as the operators "eyes" in the trench to prevent further injuries.
7. Rescuers should be made aware of any other hazards that might exist at the scene, such as underground electrical wiring, water lines, explosives, or toxic or flammable gases.
8. Civilian workers at the scene may be ready and willing to help, but they should be allowed to do so ONLY on a volunteer basis and ONLY with the permission of their supervisor. In no situation should civilians be ordered into a hazardous area to assist fire fighters.

INSTRUCTORS NOTES

Ref: Essentials of Fire Fighting #200, IFSTA pp. 209-233

Ref: Fire Service Rescue #108 IFSTA pp. 63-144

4-12 Rescue

4-12.1
4-12.2
4-12.4

Ref; pp. 213-217 #200
pp. 128-133 #108

TEACHING POINTS

The precautions listed are courtesy of Fire Command magazine.

Rescue From Gaseous Area

Reaching a victim in a gaseous area presents a danger to respiratory organs and a danger of explosion or fire.

PROPER PROTECTIVE BREATHING EQUIPMENT SHOULD ALWAYS BE WORN IN GASEOUS AREAS

Gases that are likely to cause a need for rescue work are:

1. Industrial Gases

   a. refrigerants
   b. fumigants
   c. anesthetics
   d. fuel gases
   e. processing gases

2. Fire Gases

   a. smoke
   b. carbon dioxide
   c. carbon monoxide
      and others

3. Gases From Decomposition

   a. ammonia
   b. carbon dioxide
   c. carbon monoxide
   d. hydrogen
   e. hydrogen sulfide
   f. nitrogen
   g. sulfur dioxide

Rescue From Electrical Contact

In order to reach a victim in contact with electrical energy it is necessary for firefighters to content with energized (live) wires or equipment.

Firefighters should recognize the fact that an operation of this nature is extremely dangerous and that every precaut must be taken to protect themselves and others.

ALL ELECTRICAL WIRES AND CONDUCTORS SHOULD BE CONSIDERED AS ENERGIZED.

INSTRUCTORS NOTES

TEACHING POINTS

Ref: Essentials of Fire Fighting #200, IFSTA pp. 209-233

Ref: Fire Service Rescue #108 IFSTA pp. 63-144

4-12 Rescue

4-12.1
4-12.2
4-12.4

Ref: pp. 213-217 #200
pp. 128-133 #108

Rescue From Electrical Contact

If a wire must be cut, there is always the possibility of its curling and rolling along the ground.

Always secure a wire in place before cutting it so that the loose ends will be kept under control.

One suggested method is to throw two objects across the wire to pin the wire to the ground until power company personnel arrive.

Cut the wire with a suitable approved hot wire line cutter.

Hot line cutters are the type which are mounted on insulate sticks and they all have their limitations for safety.

THEY ARE NOT BOLT CUTTERS WITH INSULATION ON THEIR HANDLES.

The wire must be cut on both sides of a victim and it must then be separated from the ends which are secured by the two objects.

If the wire is not entangled with the body of a victim or if it is not in a position that will endanger the rescuer, the quickest method is to use what is known as a "hot stick."

A hot stick should be coated with a nonconductive material to prevent the handle from becoming a conductor.

The protective coating should be unmarred and in good condition.

When using this equipment, hook it into the victim's clothing and drag them clear of the wire.

DO NOT, UNDER ANY CIRCUMSTANCES, permit the firefighters or their clothing to touch the wire or the victims until they are clear.

It may sometimes be more practicable to remove the wire from a victim.

If such is the condition, hook the hot stick over the live wire and drag it towards you by backing away.

Pulling the wire toward you rather than pushing it away permits you to back away from the live aire and thereby causes less damage to yourself in case the wire should unhook from the "hot stick."

INSTRUCTORS NOTES

TEACHING POINTS

Ref: Essentials of Fire Fighting #200, IFSTA pp. 209-233

Ref: Fire Service Rescue #108 pp. 63-144

4-12 Rescue

4-12.1
4-12.2
4-12.4

Ref: pp. 213-217 #200
pp. 128-133 #108

Rescue From Electrical Contact

During the backing process move in a direction so that you will not be in its path should the charged wire come loose and coil toward the power line pole.

If a rope can be safely placed or thrown underneath an energized wire, this end can then be pulled well to one side

An object tied to the opposite end of the rope permits this end to be thrown over the wire.

A rescuer can then secure both ends at a safe distance, and pull the wire from the victim.

Block and Tackle

Another lifting device used to raise or move heavy weights is the block and tackle.

The block is a grooved pulley or pulleys with a hook for attachment.

The tackle is an assemblage of rope and other pulleys arrang with the block to give a mechanical advantage depending upon the number of pulleys.

Various riggings may be used to place the block and tackle over a cave-in site or over any object to be lifted.

3-12 Rescue

3-12.1

Ref: pp. 219-225 #200
pp. 93-110 #108

FIREMEN'S CARRY (One Person Carry With Assist To Load)

Although this is known as a one-person carry, it can be extremely difficult to execute if the victim is unconscious.

For an unconscious victim, a second person will be needed to assist in loading.

The following are the steps in executing the firemen's carry.

Step 1. The rescuer steps close to the victim and braces his feet against those of the victim.

Step 2. Take one of the victim's arms and, with the help of the second person. hoist the victim across the shoulder.

Step 3. Hold one arm and one leg to assure that the victim will not slip off the shoulder and carry to safety.

INSTRUCTORS NOTES

TEACHING POINTS

Ref: Essentials of Fire Fighting #200, IFSTA pp. 209-233

Ref: Fire Service Rescue #108 Ifsta pp. 63-144

3-12 Rescue

3-12.1

Ref: pp. 219-225 #200
PP. 931-110 #108

FIREMEN'S DRAG

A. For average size person.

Step 1. Turn the victim so that they are lying on their back.

Step 2. Using a piece of rope, handkerchief, or other available material, tie the victim's hands together.

Step 3. The rescuer straddles the victim and loops the victim's arms over the rescuer's head.

B. For large person.

Step 1. The drag is executed the same as for the average-sized person, except the resuer is on the side of the victim rather than astride them.

BLANKET DRAG

This drag may be executed with a blanket, rug, bunker coat, etc., and can be easily performed by one person.

Step 1. Turn the victim's so that they are lying on their backs.

Step 2. Kneel on both knees at the side of the victims. Reach across them and roll them up against your knees and hold securely.

Step 3. With one hand, slide the blanket up against the victim's back and very slightly gather it up on the victim's back.

Step 4. Gently allow the victim to roll back over off your knees. You can then easily straighten out the blanket on both sides.

Step 5. Grasp both ends of the blanket AT THE HEAD END and drag the victim to a place of safety.

EXTREMITIES CARRY

This is an easy carry to execute and may be used on a [illegible] conscious or unconscious victim.

Step 1. One rescure stands at the headt of the victim, and t the second rescuer stands at the feet.

Step 2. The arms of the rescuer at the head are slipped und the victim's arms and around the chest grasping the victim's wrists.

INSTRUCTORS NOTES

Ref: Essentials of Fire Fighting #200, IFSTA pp. 209-233

Ref: Fire Service Rescue #108, IFSTA pp. 63-144

3-12 Rescue

3-12.1

Ref: pp. 219-225 #200
pp. 93-110 #108

Note: If the victim is lying prone, assist to a sitting position and then to to the feet before executing step 1.

TEACHING POINTS

EXTREMITIES CARRY

Step 3. The rescuer at the victim's feet, standing with feet togther with one of the victim's legs on either side of the rescuers body. The victim is grasped under or just above the knees.

Step 4. The two rescuers then carry the victim to a a place of safety.

PLACING PATIENT ON A STRETCHER

Step 1. Each firefighter kneels on the knee nearest the patients feet, one person at the head, the second at the hips, the third at the lower legs and the fourth facing the first three.

Step 2. Each firefighter carefully works their hands under the patient until the weight is resting on the hands. The person at the feet can work their hands under the patient so the weight is at the forearms. The person at the head has one hand under the neck and head and the other under the shoulders. The middle person has one hand under the small of the back and the other under the hips. The person at the foot has one hand under the knees and the other under the ankles. The person on the opposite side assists at the point of greatest weight or at the point of injury.

Step.3. All three firefighters slowly raise the patient in unison, high enough to slip a stretcher in place, while the fourth firefighter places the stretcher.

ONE PERSON ASSIST

Step 1. Grasp one of the victim's wrist and hand and place the victim's bent arm behind the rescuers neck and over the shoulder. Hold the victim's arm in place and pass your other arm around the victim's waist.

TWO PERSON ASSIST

Step 1. Two firefighters place both arms of the victim around their respective necks and support the victim's body at the waist with their other arms.

INSTRUCTORS NOTES

TEACHING POINTS

Ref: Essentials of Fire Fighting #200, IFSTA pp. 209-233

Ref: Fire Service Rescue #108, IFSTA pp. 93-110

3-12 Rescue

3-12.1

Ref: pp. 219-225 #200
pp. 96-105 #108

THE PACK-STRAP CRAWL AND CARRY (One Person)

The pack-Strap Crawl gets its name from the material that is used.

This material consists of a rope, belt, cloth or other object that can be made into a loop.

A. Conscious Victim

Step 1. Assist the victim to a standing position, stand in front with your back to victim.

Step 2. Place the victims arms over the rescuers shoulders, cross and hold the victim's wrists on the rescuers chest.

Step 3. Bend forward, placing the victim's weight on the erscuers back and carry victim to a place of safety.

B. Unconscious Victim

Step 1. Place victim on back, passing the pack strap across the back and working it up under the shoulders at the arm pits.

Step 2. Lie down , face up on the victim's body, insert arms through the two loops from under the victim's armpits, then roll over onto the floor.

Step 3. With the victim on the rescuers back, get to your hands and knees and carry the victim to safety.

THE SEAT CARRY (Two Persons)

Step 1. Kneel, one on either side near victim's hips.

Step 2. Raise victim to a sitting position, steadying the body with yours arms across the back.

Step 3. Slip opposite arms under the victim's thighs, clasp wrists and rise slowly in unison.

Step 4. Adjust the upper arms to form a comfortable back rest and to make the victim secure.

Note: If victim is conscious, have them assist by placing an arm around the neck of each rescuer.

INSTRUCTORS NOTES

Ref: Essentials of Fire Fighting #200 IFSTA pp. 209-233
Ref: Fire Service Rescue #108 IFSTA pp. 88-144

3-12 Rescue

3-12.1

Ref: pp. 219-225 #200
pp. 96-105 #108

TEACHING POINTS

ARM CRADLE CARRY (One Person)

Step 1. Assume a squatting position supporting the victim with one arm around the body.

Step 2. Place your other arm under the victim's thighs and roll the victim into the hollow of your bent arms.

Step 3. Rise to a standing position by using the leg muscles.

ASTRIDE THE BACK CARRY (One Person)

Carrying astride the back is a comfortable one-person carry, but it is limited to carrying a conscious victim who can at least partially stand alone.

Step 1. Assist the victim to a standing position, stand in front of the victim and permit the victim to hold about your neck.

Step 2. Bend forward until the victim rests on your back, grasp the thighs with your hands, and with a humping motion, raise the victim well up on your back.

Step 3. Pass your forearms under the victim's legs and prepare to move to a place of safety.

THE CHAIR CARRY (Two Persons)

A two-person carry where a common chair is available consists of placing the victim on the chair and then with one rescuers in front and another behind, they grasp the chair conveniently, tip it back, and walk forward in unison.

THE THREE PERSON CARRY

Step 1. Each of the three rescuers kneel on the knee nearest the victim's feet and on the same side of the body.

Step 2. They pass their hands under the body of the victim, The person at the head under the neck and shoulders,the next at the pelvis or hips and small of the back, the third under the knees and ankles.

Step 3. At the command "lift" they raise the victim, placing the body on their knees without releasing their hands.

INSTRUCTORS NOTES

TEACHING POINTS

Ref: Essentials of Fire Fighting #200 IFSTA pp. 209-233

Ref: Fire Service Rescue #108 IFSTA pp. 96-105

3-12 Rescue

3-12.1

Ref: pp. 219-225 #200 pp. 96-105 #108

THE THREE PERSON CARRY

Step 4. At the command "prepare to rise" turn the victim slowly onto their side until the body rests in the bend of the elbows.

Step 5. At the command "rise", all rise slowly to standing position and hold the victim closely against their chests.

INCLINE DRAG

This technique is primarily used to bring an unconscious victim down an incline or stairway.

Step 1. Bring the victim to a sitting position and kneel on one knee behind the body sothat the head will rest upon one of the rescuers shoulders.

Step 2. Place your arms under the victims armpits, grasp both wrists, and pull arms snugly against the chest.

Step 3. From this crouched or kneeling position, a rescuer can drag a victim on the buttocks and legs to a place of safety.

Step 4. When an incline or stairway is reached, the rescuer may raise to a stooped-standing position while advancing down the incline. From this position, the victim is dragged backward and the buttocks and feet of the victim are permitted to slide down the incline.

ASSISTING A VICTIM DOWN A LADDER

Note: The rescuer may perform the same type of rescue with the victim facing the rescuer.

Step 1. If the victim is conscious, the rescuer proceeds below the victim. The rescuer keeps the arms around the victim and one knee between the victim's legs, to insure support should the victim become unconscious.

Step 2. Should the victim become unconscious, the rescuer rests the victim's body astride the knee between the legs and proceeds carefully to the ground.

INSTRUCTORS NOTES

Ref: Essentials of Fire Fighting #200 IFSTA pp. 209-233

Ref: Fire Service Rescue #108 IFSTA pp. 63-144

4-12.Rescue

4-12.3

Ref: pp. 219-225 #200
pp. 96-105 #108

TEACHING POINTS

IMPROVISED LITTERS

Satisfactory stretchers or litters can be improvised by using materials which are available.

A good litter may be made from two bunker coats and two pike poles.

The coats can easily be slipped onto the poles by turning them inside out over the head of a person while he holds the two poles in his hands.

The flaps should then be turned down and buttoned or snapped underneath.

Another satisfactory improvised litter can likewise be made from a blanket and two pike poles.

Place one pole on the unfolded blanket about one foot from its center and fold the short side of the blanket over the pole toward the other side.

Place a second pole on the two thicknesses, about 20 inches from the other pole and fold the remaining side of the blanket over the second pole towards the first.

When a person is placed upon the blanket between the poles, the body weight will hold the blanket secure.

To prepare a victim who is seriously injured for lowering first wrap in a blanket or salvage cover and then lash the victim to a stretcher or ladder.

If the ladder is used, a flat board should be placed between the rungs and the victim to prevent the rungs from causing further injury to the back.

Step 1. Start the lashing with a clove hitch around one of the handles at the head or around the beam of the ladder past the first rung above the head.

Step 2. Bring the rope down one side of the stretcher or ladder and place one hal hitch around the chest, the second around the upper thighs and the third just below the knees.

Step 3. Make a fourth hitch around the victim's ankles(not around the stretcher or ladder) and pass the rope around the victim's feet, under the arches.

INSTRUCTORS NOTES

TEACHING POINTS

Ref: Essentials of Fire Fighting #200, IFSTA pp. 209-233

Ref: Fire Service Rescue #108 pp. 63-144

4-12 Rescue

4-12.3
4-12.6
Ref: pp. 2-9-225 #200
pp. 96-105 #108

Step 4. Bring the rope up along the other side of the victim, making a hitch around each of the previously applied half hitches and complete the lashing with a clove hitch around the handle or beam opposite the initial clove hitch.

The remainder of the rope may be used for the guide line, or other ropes may be used for this purpose.

LIFE KNOT

The bowline-on-a-bight rescue knot forms two loops in a rope which can be placed around a victim's thighs.

This rescue knot must be made more secure on a victim by tying an additional loop around the victims chest.

How to tie a bowline-on-a-bight and how to place it on a victim is described in the following steps.

Note: If the victim or rescuer is exceptionally tall or short, this measurement must be altered

Step 1. Double the working end of a rope back upon itself, approximately eight feet. Stand on this double line, near the center, and with double rope in each hand, adjust it to the hips or waist of the rescuer.

Step 2. Consider the loop end of the doubled rope as the working end and tie an overhand knot to form a loop approximately three feet long, so that the loop hangs downward through the overhand knot.

Step 3. Hold the overhand knot in the right hand, reach down with the left hand and bring the three foot loop up and over the right hand.

Step 4. Place the loop that is in the left hand under the thumb of the right hand, to be held secure. Grasp the two sides of the loop where they go through the overhand knot and pull upward to form a bight.

Step 5. Tighten the bight and adjust the two loops so that they are even.

Step 6. Place the two loops over the victim's legs and draw them well up into the crotch.

Step 7. Place a half hitch around the victim's chest with the working line and secure it in front with an overhand safety to form a loop.

Step 8. Place the loose end of the line through the loop that was just formed, pull on the working line to secure the tie.

INSTRUCTORS NOTES

Ref: Essentials of Fire Fighting #200, IFSTA pp. 209-233

Ref: Fire Service Rescue #108 pp. 63-144

3-12 Rescue

3-12.3
3-12.4

Ref; pp. 226-231 #200
pp. 90-116 #108

IMPORTANT: ALWAYS APPLY BODY WEIGHT TO CHECK THE LINE BEFORE ATTEMPTING TO SLIDE THE ROPE.

TEACHING POINTS

LIFE LINE

Life lines must be dependable at all times. Thier size and materials should be such that they will stand at least five times the strain that is likely to be placed on them during rescue work.

LIFE BELT

This safety and rescue device should be carefully inspected at regular intervals and this inspection should include a close examination of the snap and buckles.

Firefighters should always remove their necktties before sliding a life line.

Serious injury could result if a necktie rolled into the hook during a slide.
The life belt described here is to be used right-handed and a left-handed person should adapt to its use with extreme caution.

The belt should be put on in such a manner that the back of the hook will be toward the hand that controls the rope.

The belt should be buckled snugly with equal tension on all straps, and all strap ends should be secured in the keepers.

A person who is going to slide a life line MUST ALWAYS WEAR GLOVES.

Step 1. With the rope secured at some point above the rescuer, hold the life line along the closed side of the hook with the right hand and throw a loop TOWARD YOUR BODY through the snap with your left hand.

Step 2. Continue to hold the hook with your right hand and throw a second loop TOWARD YOUR BODY through the snap.

Step 3. Raise the hook upward on the line as far as possible. Grasp the line high above the hook with the left hand. Pull the rope across the back of the hips with the right hand, ready for the slide.

Step 4. To make the slide, step out of the window, keep both feet against the wall and use your right hand as a brake by holding the rope tightly behind your hip.

INSTRUCTORS NOTES

Ref: Essentials of Fire Fighting #200 IFSTA pp. 209-233

Ref: Fire Service Rescue #108 IFSTA pp. 63-144

3-12 Rescue

3-12.3
3-12.4

Ref: pp. 226-231 #200
pp. 90-116 #108

TEACHING POINTS

LIFE BELT

Step 5. Push yourself away from the wall with your feet and slide at a desired speed.

Practice will enable you to control your speed and you may stop at a lower point to secure a new grip on the rope.

As an added precaution, a second person should control the line from the ground.

A second life belt may be used when a rescue is made.

After a rescuer has secured himself to the line, an extra turn is taken on the hook to manage the extra weight.

Step 1. The victim takes his place sitting on the window sill between the rescuer's feet.

Step 2. The rescuer then drops to the lap of the victim who snaps his belt into the eye of the snap on the rescuer's belt and places his arms around the rescuer.

Step 3. The rescuer pushes both clear from the sill with his feet and descends slowly.

LIFE NET PRACTICES

A life net is not commonly used, but it could be essential in some rescue operations.

With a well trained crew, a life net is the means of rescuing victims that are trapped on upper floors.

Many things can happen when jumping into a life net and its use is extremely hazardous.

A life net should be opened and manned at a safe distance from the point where it is to be used.

If it is carried to the point of use before it is completely ready, an excited victim may jump before the net is properly manned.

The most practical way to carry a one-quarter fold net is in a vertical position with the frame side down.

Although it can be carried by less, four firefighters are recommended, which affords a proper number for opening the net.

INSTRUCTORS NOTES

TEACHING POINTS

Ref: Essentials of Fire Fighting #200, IFSTA pp. 209-233

Ref: Fire Service Rescue #108 IFSTA pp. 83-144

3-12 Rescue

3-12.3
3-12.4

Ref: pp. 226-231 #200
pp. 90-116 #108

Note: Life nets should be inspected regularly, according to recommendations and specifications of the manufacturer.

LIFE NET PRACTICES

The net should be carried by the frame and not by the springs.

The number of the positions are 1,2,3, and 4 and designate the part that each firefighter in that particular position must execute.

At a safe distance from the place of service, place the one-quarter fold life net on the ground in a horizontal position with the folded fabric side up and the net is ready to be opened.

Step 1. No 2 steps back to the middle of the net on the fabric side. No. 1 stands at the open end and No. 3 at the hinged end. No. 4 reaches across the net and grasps the two top rails of the frame near the open end. Each is in a position to open the net to one-half fold size.

Step 2. No. 4 continues to unfold the frame by pulling the two top rails over and toward him. No. 3 checks to see that the hinge locks snap into place.

Step 3. The No. 2 firefighter reaches over and receives the top frame at the hinge from No. 3. No. 2 then steps backward to open the net fully.

Step 4. The net now opens into a complete full circle and the hinge locks are snapped into place at Nos. 1 and 4 positions. The four firefighters who opened the net are now located at the locks. All additional personnel should take evenly placed positions between them.

The life net is now ready to be moved into place for service.

This maneuver should be done quickly and the handlers should at all times, be ready for the jump in case the victim will not wait for instructions.

NOT LESS THAN EIGHT FIREFIGHTERS SHOULD BE USED TO HOLD A LIFE NET WHEN A JUMP IS TO BE MADE.

Each person should stand facing the net with their left foot forward. The stance should be such that all net persons are in position to quickly move forward, backward, or sideways with absolute freedom of body. THE GRIP ON THE FRAME OF THE NET SHOULD BE MADE WITH THE PALMS UPWARD AND WITH THUMBS UNDERNEATH THE RAIL. HOLD THE NET ABOUT SHOULDER HIGH WITH THE ARMS TO THE SIDE OF THE BODY BECAUSE A SUDDEN IMPACT MAY JAM THE ELBOWS INTO THE STOMACH OF THE HOLDER.

INSTRUCTORS NOTES

TEACHING POINTS

Ref: Essentials of Fire Fighting #200 IFSTA pp. 209-233

Ref: Fire Service Rescue #108 IFSTA pp. 63-144

4-12 Rescue

4-12.5

Ref: pp. 231-233 #200
pp. 90-116 #108

VEHICLE EXTRICATION

Vehicle collisions unfortunately result in numerous variations of wreckage in which people may be trapped.

The first impulse of witnesses or rescuers may be to use the tools at hand to free the victims as quickly as possible.

It should be remembered that any life-threatening conditions must be stabilized immediately if the extrication is going to serve its purpose. This means attention to:

1. Breathing
2. Heartbeat
3. Bleeding
4. Shock prevention

It may be necessary for the first operations of the rescuers to concentrate on getting into the vehicle so that life-support activities can be initiated and so that the victim can be readied for extrication.

Much information about specific injuries can be received from the victims if they are conscious.

Observe their state of awareness and calm them down if necessary.

Sometimes the victims can be a great help with their own extrication, but unless they are moving around with a minimum of pain assume that the spine or neck is injured.

If that is more likely the case, do not move anything until any and all fractures are immobilized with backboards and cervical collars.

Do not remove foreign objects such as a piece of metal which may be lodged in the body, or a serious bleeding may result. Cut the impaled object free from the auto and apply bandages.

Transport to a hospital for removal with the exception of an object impaled in the cheek. Such an object should be removed and bandages should be placed both inside and outside the cheek to control bleeding.

INSTRUCTORS NOTES

Ref: Essentials of Fire Fighting #200, IFSTA pp. 209-233

Ref: Fire Service Rescue #108, IFSTA pp. 63-144

4-12 Rescue

4-12.5

Ref: pp. 231-233 #200
pp. 90-116 #108

TEACHING POINTS

VEHICLE EXTRICATION

Although attention to life-threatening conditions is of utmost importance, first arriving firefighters must also attend to any present fire hazard while the victim is still trapped.

An engine company should immediately prepare a charged 1-1/2-inch hose line in anticipation of a possible fire even if a fuel spill is not apparent, because undetected fuel vapors may have collected at a dangerous spot.

Turning off the ignition and disconnecting the battery both lessen the danger of fire. REMOVE THE NEGATIVE GROUND WIRE FIRST TO REDUCE THE CHANCE OF CREATING AN ACCIDENTAL SPARK.

When it is determined that the victim is not in danger of dying immediately or that everything possible has been done to help the condition of the victim, extrication procedures may begin.

The condition of the vehicle and the specific location of the victim(s) within the vehicle will determine the best access route.

If doors will open or can be made to open, that way usually would be the first choice.

Otherwise, rescuers will have to extricate through the windows or through the body of the vehicle.

Many rescue tools are carried on fire department apparatus. The different kinds of tools are made necessary by the many different situations found in extrication situations.

Even a list of hand tools is quite long.

- Ordinary screwdriver
- Phillips screwdriver
- Adjustable wrench
- Needle-nosed pliers
- Claw hammer
- Multi-purpose pry bars
- Locksmith's tool
- Keyhole saw
- Windshield removal tools
- Short handled sledgehammer

Power tools are extremely effective time-savers. Some departments have air powered chisels, impact hammers, Gasoline powered saws and hydraulically operated spreader units.

INSTRUCTORS NOTES

Ref: Essentials of Fire Fighting #200, IFSTA pp. 209-233
Ref: Fire Service Rescue #108, IFSTA pp. 63-144

4-12 Rescue

4-12.5

Ref: pp. 231-233 #200
PP. 90-116 #108

TEACHING POINTS

VEHICLE EXTRICATION

Hand-powered hydraulic kacks have long been a basic tool of many departments.

Now a relatively new gasoline-powered spreader, the Hurst or Lukas tool are seeing frequent use.

Up to 10,000 pounds of force can be generated at the tip either spreading open a door or pulling back a seat.

The tool can also be used to raise a vehicle sufficiently to free a trapped victim underneath. Although the advent of "air bages" has made this task even more effective.

The variations of local equipment and the different conditions of collisions make it impossible to present training for every situation.

Local jurisdictions will better define their own needs. However for the increasing number of departments having Hurst Rescue Tools, the following instructions will address the problem of a jammed door in vehicle extrication

A car door can be completely removed by a skilled operator in less than three minutes.

Step 1. It is necessary to secure a purchse point where the top of the hurst tool can engage.

Sometimes this can be accomplished by jamming the tip into the jamb between the door and the body of the vehicle.

The seam can be widened by positioning the tool in the window and opening it vertically to push on the upper door frame and to push down on the door body. This bending maneuver will pull the door out slightly.

Step 2. With tool tip in the gap near the locking mechanism, the closed jaws are reopened until the door is forced open.

It may help to stop and push the closed tip further into the opening for better leverage. The door should be opened as far as possible to expose the hinges.

INSTRUCTORS NOTES	TEACHING POINTS
Ref: Essentials of Fire Fighting #200, IFSTA pp. 209-233 Ref: Fire Service Rescue #108, IFSTA pp. 63-144 4-12 Rescue 4-12.5 Ref: pp. 231-233 #200 pp. 90-116 #108	Step 3. The jaws are closed again and positioned above the top hinge. The opening jaws then spread until the hinge breaks. Repeat the procedure to break the lower hinge, re-positioning the tip deeper into the slot if necessary for better leverage. When both hinges are broken the door may be moved out of the way. rescuers then prepare the victim(s) for transportation according to approved EMS practices.

UNIT QUIZ

MATCHING

Place the letter in front of the word that correctly completes each statement in the space provided.

a 100. A _____ is a screw jack used between two uprights to hold trench walls apart.

a. Trench Jack

___ 1. Immediate rescue of _____ victims should be accomplished first.

___ 2. When floor supports fail in any type of building, the floors and roof may drop in large sections and form _____ .

___ 3. _____ is a process of erecting a series of timbers or jacks to strengthen a wall or to prevent further collapse of a building or earth opening.

___ 4. A buried victim must immediately receive _____ .

___ 5. _____ should not be used in rescue until the exact location and number of victims is known.

___ 6. Work from a good _____ .

___ 7. _____ as you jack, using cross-tie crib.

___ 8. Raise or lower in _____ slowly when using several jacks on one load.

___ 9. Avoid _____ jack.

___ 10. Never leave a jack under _____.

a. Heavy equipment
b. Air
c. Surface
d. Shoring
e. Unison
f. Foundation
g. Pack
h. Overextending
i. Voids
J. Load

There are several safety precautions firefighters must remember when they are involved in search and rescue missions at cave-ins. CIRCLE THE MOST APPROPRIATE ANSWER.

11. _____ should be placed in a trench on both sides of the cave-in area for a quick exit.

a. handholds
b. ropes
c. ladders

12. Firefighter should be careful with the tools that they are using in the trench to avoid _____ .

a. reprimand
b. injuring either one another or the victim
c. misuse of time

13. Mechanical digging equipment must have a _____ assigned to act as the operator's "eyes."

a. chance bystander
b. supervisor
c. guide

14. Unnecessary fire department personnel should be kept out of the trench and _____ .

a. away from the edge
b. around the fire apparatus
c. occupied elsewhere

15. Rescuers should be aware of any other _____ that might exist at the scene.

a. jobs.
b. hazards
c. civilian workers

16. A _____ should always be worn in gaseous areas.

a. turn-out coat
b. helmet
c. breathing apparatus

17. All electrical wires and conductors should be considered _____ .

a. with caution
b. as energized
c. dead

18. If a wire must be cut, there is always the possibility of its _____ .

a. not breaking
b. sparking
c. curling and rolling along the ground

19. The quickest method to move the body of a victim when not entangled in electrical wire is to use what is known as a _____ .

a. hotstick
b. jumper
c. pike pole

20. Pulling the wire toward you, rather than pushing it away, permits you to _____ .

a. watch where you are walking
b. back away from the live wire
c. observe the wire at all times

ANSWER KEY

1. c.
2. i.
3. d.
4. b.
5. a.
6. f.
7. g.
8. e.
9. h.
10. j.
11. c.
12. b.
13. c.
14. a.
15. b.
16. c.
17. b.
18. c.
19. a.
20. b.

SEARCHING HINTS

If fire is discovered on floor above the fire floor, a charged line should be called for.

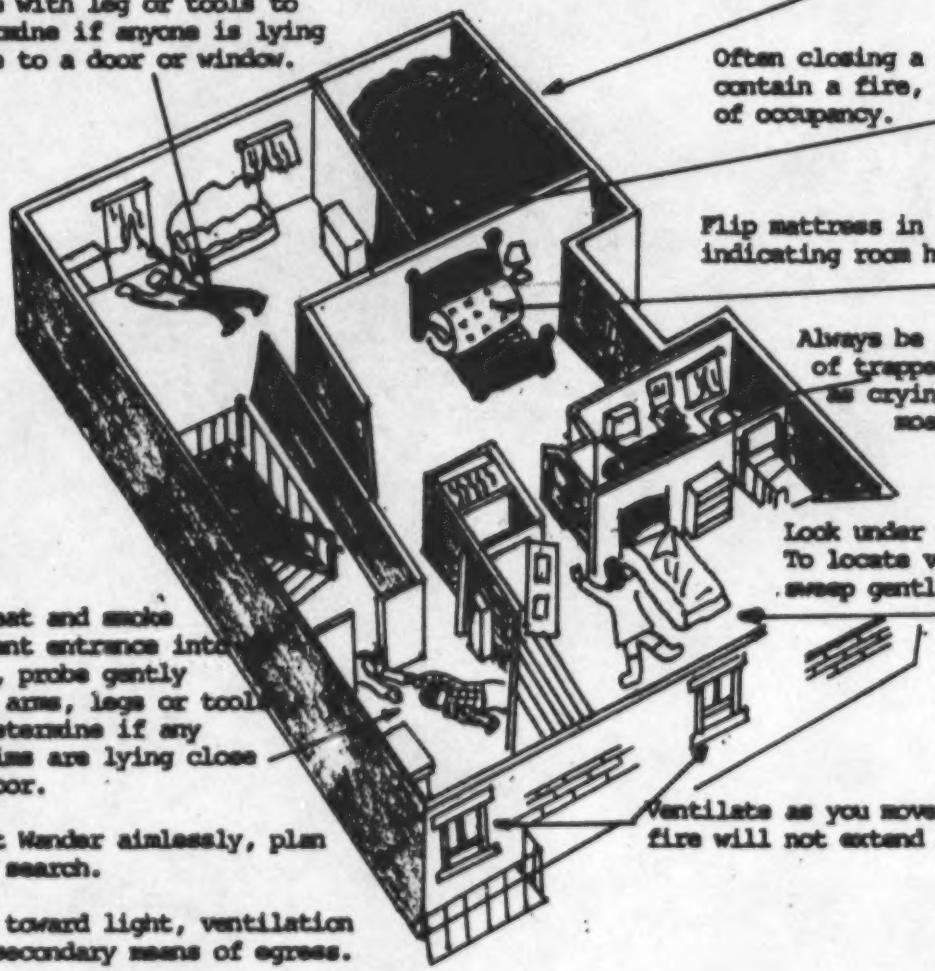
Probe with leg or tools to determine if anyone is lying close to a door or window.

Often closing a door may temporarily contain a fire, allowing search of occupancy.

Flip mattress in "U" position indicating room has been searched.

Always be alert for signs of trapped victims, such as crying, coughing or moaning.

Look under and behind furniture To locate victims under bed sweep gently back and forth



If heat and smoke prevent entrance into area, probe gently with arms, legs or tools to determine if any victims are lying close to door.

Don't Wander aimlessly, plan your search.

Move toward light, ventilation and secondary means of egress.

Ventilate as you move, providing fire will not extend by your venting.